CLAIMS

[0094] What is claimed is:

1. A method for protecting content within a page displayed by a computer, comprising:

identifying a designated portion of original content contained within a page, to be protected;

encrypting the designated portion of original content to form a portion of encrypted content;

replacing the designated portion of original content within the page with the portion of encrypted content;

rendering the page into a graphics device, comprising decrypting the portion of encrypted content; and

displaying at least a portion of data from the graphics device.

2. The method of claim 1 wherein the page is a web page.

3. The method of claim 2 wherein the web page is an HTML page.

4. The method of claim 2 wherein the web page is an XML page.

5. The method of claim 1 wherein the page is part of a document produced by a software application.

6. The method of claim 1 wherein the graphics device is a memory device.

7. The method of claim 1 wherein the graphics device is a screen device.

8. The method of claim 1 wherein the graphics device is a graphics port.

9. The method of claim 1 wherein the content is text content and said encrypting is based on encoding of characters.

10. The method of claim 1 wherein the content is text content and said encrypting is based on encoding of words.

11. The method of claim 1 wherein the content is text content and said encrypting comprises adding leading and trailing characters to flag encrypted text.

12. The method of claim 1 wherein the content is text content and said encrypting comprises padding encrypted text so that identical words have distinct encrypted representations.

13. The method of claim 1 wherein said rendering comprises converting content into graphics output.

14. The method of claim 13 wherein the graphics output is raster output.

15. The method of claim 1 wherein said identifying, said encrypting and said replacing are performed by a server computer, and wherein said rendering and said displaying are performed by a client computer connected to the server computer over a network.

16. The method of claim 1 wherein said decrypting the portion of encrypted content occurs within a patched operating system function for outputting content.

17. The method of claim 16 wherein the content is text content and the operating system function is a Microsoft Windows TextOut function.

18. The method of claim 16 wherein the content is text content and the operating system function is a Macintosh DrawText function.

19. The method of claim 1 further comprising formatting the page to determine a page layout.

20. The method of claim 19 wherein the portion of encrypted content has substantially the same layout within the page as the designated portion of original content.

21. The method of claim 19 wherein said formatting comprises decrypting encrypted content, to ensure that the page layout corresponds to a layout for a page containing the designated portion of original content.

22. The method of claim 19 wherein the content is text content and said formatting comprises calculating widths of character strings.

23. The method of claim 22 wherein said formatting comprises decrypting encrypted text strings, to ensure that the page layout corresponds to a layout for a page containing the designated portion of original content.

24. The method of claim 23 wherein said decrypting encrypted text strings occurs within a patched operating system function for determining widths of character strings.

25. The method of claim 24 wherein the operating system function is a Microsoft Windows GetTextExtent function.

26. A system for protecting content within a page displayed by a computer, comprising:

a parser identifying a designated portion of original content contained within a page, to be protected;

an encoder encrypting the designated portion of original content to form a portion of encrypted content;

an editor replacing the designated portion of original content with the portion of encrypted content, within the page;

a graphics device;

a page renderer rendering the page into said graphics device, comprising a content decoder decrypting the portion of encrypted content; and

a display device displaying at least a portion of data from said graphics device.

27. The system of claim 26 wherein the page is a web page.

28. The system of claim 27 wherein the web page is an HTML page.

29. The system of claim 27 wherein the web page is an XML page.

30. The system of claim 26 wherein the page is part of a document produced by a software application.

31. The system of claim 26 wherein said graphics device is a memory device.

32. The system of claim 26 wherein said graphics device is a screen device.

33. The system of claim 26 wherein said graphics device is a graphics port.

34. The system of claim 26 wherein the content is text content and said encoder performs encoding of characters.

35. The system of claim 26 wherein the content is text content and said encoder performs encoding of words.

36. The system of claim 26 wherein the content is text content and said encoder adds leading and trailing characters to flag encrypted text.

37. The system of claim 26 wherein the content is text content and said encoder pads encrypted text so that identical words have distinct encrypted representations.

38. The system of claim 26 wherein said page renderer comprises an output processor converting content into graphics output.

39. The system of claim 38 wherein the graphics output is raster output.

40. The system of claim 26 wherein said parser, said encoder and said editor reside on a server computer, wherein said graphics device and said page renderer reside on a client computer, and wherein said display device is connected to the client computer, the system further comprising network connectors connecting the client computer to the server computer.

41. The system of claim 26 wherein said content decoder operates within a patched operating system function for outputting content.

42. The system of claim 41 wherein the content is text content and the operating system function is a Microsoft Windows TextOut function.

43. The system of claim 41 wherein the content is text content and the operating system function is a Macintosh DrawText function.

44. The system of claim 26 further comprising a page formatter formatting the page to determine a page layout.

45. The system of claim 44 wherein the portion of encrypted content has substantially the same layout within the page as the designated portion of original content.

46. The system of claim 44 wherein said page formatter comprises a decoder, to ensure that the page layout corresponds to a layout for a page containing the designated portion of original content.

47. The system of claim 44 wherein the content is text content and said page formatter comprises a string analyzer calculating widths of character strings.

48. The system of claim 47 wherein said page formatter comprises a string decoder decrypting encrypted text strings, to ensure that the page layout corresponds to a layout for a page containing the designated portion of original content.

49. The system of claim 48 wherein said string decoder operates within a patched operating system function for determining widths of character strings.

50. The system of claim 49 wherein the operating system function is a Microsoft Windows GetTextExtent function.

51. A method for protecting content contained within a page displayed by a computer, comprising:

accessing a page containing a portion of encrypted content;

rendering the page into a graphics device, comprising decrypting the portion of encrypted content; and

displaying at least a portion of data from the graphics device.

52. The method of claim 51 wherein the page is a web page.

53. The method of claim 52 wherein the web page is an HTML page.

54. The method of claim 52 wherein the web page is an XML page.

55. The method of claim 51 wherein the page is part of a document produced by a software application.

56. The method of claim 51 wherein the graphics device is a memory device.

57. The method of claim 51 wherein the graphics device is a screen device.

58. The method of claim 51 wherein the graphics device is a graphics port.

59. The method of claim 51 wherein said rendering comprises converting content into graphics output.

60. The method of claim 59 wherein the graphics output is raster output.

61. The method of claim 51 wherein said decrypting the portion of encrypted content occurs within a patched operating system function for outputting content.

62. The method of claim 61 wherein the content is text content and the operating system function is a Microsoft Windows TextOut function.

63. The method of claim 61 wherein the content is text content and the operating system function is a Macintosh DrawText function.

64. The method of claim 51 further comprising formatting the page to determine a page layout.

65. The method of claim 64 wherein the portion of encrypted content has substantially the same layout within the page as the portion of decrypted content.

66. The method of claim 64 wherein said formatting comprises decrypting encrypted content, to ensure that the page layout corresponds to a layout for a page containing the designated portion of original content.

67. The method of claim 64 wherein the content is text content and said formatting comprises calculating widths of character strings.

68. The method of claim 67 wherein said formatting comprises decrypting encrypted text strings, to ensure that the page layout corresponds to a layout for a page containing the portion of decrypted content.

69. The method of claim 68 wherein said decrypting encrypted text strings occurs within a patched operating system function for determining widths of character strings.

70. The method of claim 67 wherein the operating system function is a Microsoft Windows GetTextExtent function.

71. The method of claim 51 further comprising receiving the page having a portion of encrypted content from a server computer.

72. A system for protecting content contained within a page displayed by a computer, comprising:

computer hardware storing a page containing a portion of encrypted content;

a graphics device;

a page renderer rendering the page into said graphics device, comprising a content decoder decrypting the portion of encrypted content; and

a display device displaying at least a portion of data from said graphics device.

73. The system of claim 72 wherein the page is a web page.

74. The system of claim 73 wherein the web page is an HTML page.

75. The system of claim 73 wherein the web page is an XML page.

76. The system of claim 72 wherein the page is part of a document produced by a software application.

77. The system of claim 72 wherein said graphics device is a memory device.

78. The system of claim 72 wherein said graphics device is a screen device.

79. The system of claim 72 wherein said graphics device is a graphics port.

80. The system of claim 72 wherein said page renderer comprises an output processor converting content into graphics output.

81. The system of claim 80 wherein the graphics output is raster output.

82. The system of claim 72 wherein said content decoder operates within a patched operating system function for outputting content.

83. The system of claim 82 wherein the content is text content and the operating system function is a Microsoft Windows TextOut function.

84. The system of claim 82 wherein the content is text content and the operating system function is a Macintosh DrawText function.

85. The system of claim 72 further comprising a page formatter formatting the page to determine a page layout.

86. The system of claim 85 wherein the portion of encrypted content has substantially the same layout within the page as the portion of decrypted content.

87. The system of claim 85 wherein said page formatter comprises a decoder, to ensure that the page layout corresponds to a layout for a page containing the designated portion of original content.

88. The system of claim 85 wherein the content is text content and said page formatter comprises a string analyzer calculating widths of character strings.

89. The system of claim 88 wherein said page formatter comprises a string decoder decrypting encrypted text strings, to ensure that the page layout corresponds to a layout for a page containing the portion of decrypted content.

90. The system of claim 89 wherein said string decoder operates within a patched operating system function for determining widths of character strings.

91. The system of claim 90 wherein the operating system function is a Microsoft Windows GetTextExtent function.

92. The system of claim 72 further comprising:

a network connector; and

a receiver receiving the page having a portion of encrypted content from a server computer via said network connector.

93. A method for protecting content contained within a page displayed by a computer, comprising:

identifying a designated portion of original content within a page, to be protected;

encrypting the designated portion of original content to form a portion of encrypted content; and

replacing the designated portion of original content within the page with the portion of encrypted content.

94. The method of claim 93 wherein the page is a web page.

95. The method of claim 94 wherein the web page is an HTML page.

96. The method of claim 94 wherein the web page is an XML page.

97. The method of claim 93 wherein the page is part of a document produced by a software application.

98. The method of claim 93 wherein the content is text content and said encrypting is based on encoding of characters.

99. The method of claim 93 wherein the content is text content and said encrypting is based on encoding of words.

100. The method of claim 93 wherein the content is text content and said encrypting comprises adding leading and trailing characters to flag encrypted text.

101. The method of claim 93 wherein the content is text content and said encrypting comprises padding encrypted text so that identical words have distinct encrypted representations.

102. The method of claim 93 wherein the portion of encrypted content has substantially the same layout within the page as the designated portion of original content.

103. The method of claim 93 further comprising transmitting the page with the portion of encrypted content to a client computer.

104. A system for protecting content contained within a page displayed by a computer, comprising:

a parser identifying a designated portion of original content within a page, to be protected;

an encoder encrypting the designated portion of original content to form a portion of encrypted content; and

an editor replacing the designated portion of content with the portion of encrypted content, within the page.

105. The system of claim 104 wherein the page is a web page.

106. The system of claim 105 wherein the web page is an HTML page.

107. The system of claim 105 wherein the web page is an XML page.

108. The system of claim 104 wherein the page is part of a document produced by a software application.

109. The system of claim 104 wherein the content is text content and said encoder performs encoding of characters.

110. The system of claim 104 wherein the content is text content and said encoder performs encoding of words.

111. The system of claim 104 wherein the content is text content and said encoder adds leading and trailing characters to flag encrypted text.

112. The system of claim 104 wherein the content is text content and said encoder pads encrypted text so that identical words have distinct encrypted representations.

113. The system of claim 104 wherein the portion of encrypted content has substantially the same layout within the page as the designated portion of original content.

114. The system of claim 104 further comprising:

a network connector; and

a transmitter transmitting the page with the portion of encrypted content to a client computer via said network connector.

115. A method for protecting text within a page displayed by a computer, comprising:

formatting a page containing a first portion of text to determine a page layout; and

rendering the page according to the page layout into a graphics device, comprising:

replacing the first portion of text with a second portion of text;

converting the second portion of text to a graphics output; and

writing the graphics output into the graphics device.

116. The method of claim 115 wherein the first portion of text has the same word widths as does the second portion of text.

117. The method of claim 115 wherein the graphics output is raster output.

118. The method of claim 115 wherein said replacing the first portion of text with a second portion of text occurs within a patched operating system function for converting text into graphics output.

119. The method of claim 118 wherein the operating system function is a Microsoft Windows TextOut function.

120. The method of claim 118 wherein the operating system function is a Macintosh DrawText function.

121. The method of claim 115 wherein said formatting comprises:

replacing first text strings with second text strings; and

calculating widths of the second text strings based on selected font types and font sizes.

122. The method of claim 121 wherein said replacing first text strings with second text strings occurs within a patched operating system function for determining widths of character strings.

123. The method of claim 122 wherein the operating system function is a Microsoft Windows GetTextExtent function.

124. A system for protecting text within a page displayed by a computer, comprising:

a page formatter formatting a page containing a first portion of text to determine a page layout; and

a page renderer rendering the page according to the page layout into a graphics device, comprising:

a text processor replacing the first portion of text with a second portion of text; and

a text convertor converting the second portion of text to a graphics output and writing the graphics output into the graphics device.

125. The system of claim 124 wherein the first portion of text has the same word widths as does the second portion of text.

126. The method of claim 124 wherein the graphics output is raster output.

127. The system of claim 124 wherein said text processor operates within a patched operating system function for converting text into graphics output.

128. The system of claim 127 wherein the operating system function is a Microsoft Windows TextOut function.

129. The system of claim 127 wherein the operating system function is a Macintosh DrawText function.

130. The system of claim 124 wherein said formatter comprises:

a string processor replacing first text strings with second text strings; and

a string analyzer calculating widths of the second text strings based on selected font types and font sizes.

131. The system of claim 130 wherein said string processor operates within a patched operating system function for determining widths of character strings.

132. The system of claim 131 wherein the operating system function is a Microsoft Windows GetTextExtent function.

133. A method for protecting content within a page displayed by a computer, comprising:

encrypting a designated portion of original content contained within a page to form a portion of encrypted content;

replacing the designated portion of original content within the page with the portion of encrypted content; and

decrypting the portion of encrypted content when rendering the page into a graphics device.

134. The method of claim 133 further comprising decrypting an encrypted string when formatting the page to determine a page layout.

135. A system for protecting content within a page displayed by a computer, comprising:

an encoder encrypting a designated portion of original content contained within a page to form a portion of encrypted content;

an editor replacing the designated portion of original content with the portion of encrypted content, within the page; and

a content decoder decrypting the portion of encrypted content when rendering the page into a graphics device.

136. The system of claim 135 further comprising a string decoder decrypting an encrypted string when formatting the page to determine a page layout.

137. A method for protecting content contained within a page displayed by a computer, comprising:

accessing a page containing a portion of encrypted content; and

decrypting the portion of encrypted content when rendering the page into a graphics device.

138. The method of claim 137 further comprising decrypting an encrypted string when formatting the page to determine a page layout.

139. A system for protecting content contained within a page displayed by a computer, comprising:

computer hardware storing a page containing a portion of encrypted content; and

a content decoder decrypting the portion of encrypted content when rendering the page into a graphics device.

140. The system of claim 139 further comprising a string decoder decrypting an encrypted string when formatting the page to determine a page layout.

141. A method for protecting text within a page displayed by a computer, comprising:

replacing first text strings with second text strings when formatting a page to determine a page layout; and

replacing a first portion of text with a second portion of text when rendering the page according to the page layout into a graphics device.

142. A system for protecting text within a page displayed by a computer, comprising:

a string processor replacing first text strings with second text strings when formatting a page to determine a page layout; and

a text processor replacing a first portion of text with a second portion of text when rendering the page according to the page layout into a graphics device.